



K.P. KAUFFMAN

SURVEY REPORT

SUCKLA-BROWN UNIT #8

KPK 8

2/6/2015



The **Ultimate Partner** In Wellbore Placement

CUSTOMER K.P. Kauffman
PROJECT Suckla Brown Unit #8
FIELD Spindle

SDI JOB NO. 253146
SDI DISTRICT Casper
SDI KIT/UNIT

SITE INFORMATION

Site Name Weld County, Colorado
Lat/Long 40.06006° N, 104.87454° W
Northing
Easting

Section SWSE 10
Township 1N
Range 67W 6PM

MAP INFORMATION

North Reference True North
Grid Correction
System
Datum
Map Zone



WELL INFORMATION

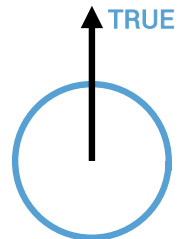
Lat/Long 40.06006° N, 104.87454° W
Northing
Easting
UWI 05-123-07484

DEPTH AND ELEVATION REFERENCE

Ground Level 5051 ft above Mean Sea Level
Reference Datum Ground Level
Reference Height 0 ft above G.L.
Reference Elevation 5051 ft

VERTICAL SECTION REFERENCE

+N/-S 0 ft
+E/-W 0 ft
Proposal Direction
Calculation Method Minimum Curvature



LOCAL GRAVITY REFERENCE INFORMATION

Local Gravity 999.030 mG [computed]

WELL NOTES

Keeper gyro wireline survey run in tubing from surface to 4065 feet.

OPERATORS

Jon Valenzuela

SDI Operator Name (Printed)

SIGNATURE

DATE

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
0.00	0.00	0.00	0.00	0.00	0.00	0.00	Invalid	0.00	0.00
25.00	0.12	25.89	25.00	-0.02	0.02	0.01	0.48	0.03	25.89
50.00	0.24	25.89	50.00	-0.07	0.09	0.05	0.48	0.10	25.89
75.00	0.36	25.89	75.00	-0.16	0.21	0.10	0.48	0.23	25.89
100.00	0.48	25.89	100.00	-0.28	0.37	0.18	0.48	0.42	25.89
125.00	0.41	23.76	125.00	-0.41	0.55	0.26	0.27	0.61	25.57
150.00	0.35	20.84	150.00	-0.51	0.70	0.33	0.27	0.78	24.90
175.00	0.29	16.62	175.00	-0.59	0.83	0.37	0.27	0.91	24.00
200.00	0.22	10.08	200.00	-0.65	0.94	0.40	0.27	1.02	22.90
225.00	0.17	359.40	225.00	-0.68	1.03	0.41	0.27	1.10	21.57
250.00	0.12	339.58	250.00	-0.69	1.09	0.40	0.27	1.16	20.01
275.00	0.10	306.39	275.00	-0.67	1.13	0.37	0.27	1.19	18.12
300.00	0.13	273.96	300.00	-0.63	1.14	0.32	0.27	1.19	15.80
325.00	0.18	271.65	325.00	-0.57	1.15	0.26	0.22	1.17	12.65
350.00	0.23	270.40	350.00	-0.49	1.15	0.17	0.22	1.16	8.31
375.00	0.29	269.63	375.00	-0.38	1.15	0.05	0.22	1.15	2.71
400.00	0.34	269.10	400.00	-0.25	1.15	-0.08	0.22	1.15	355.89
425.00	0.36	265.96	425.00	-0.10	1.14	-0.24	0.12	1.16	348.31
450.00	0.39	263.22	449.99	0.06	1.12	-0.40	0.12	1.19	340.44
475.00	0.41	260.82	474.99	0.24	1.10	-0.57	0.12	1.24	332.47
500.00	0.44	258.70	499.99	0.42	1.07	-0.76	0.12	1.31	324.63
525.00	0.43	261.23	524.99	0.61	1.03	-0.94	0.09	1.40	317.59
550.00	0.42	263.90	549.99	0.79	1.01	-1.13	0.09	1.51	311.85
575.00	0.41	266.73	574.99	0.97	0.99	-1.31	0.09	1.64	307.30
600.00	0.40	269.70	599.99	1.14	0.99	-1.48	0.09	1.78	303.74
625.00	0.42	271.25	624.99	1.31	0.99	-1.66	0.11	1.93	300.84
650.00	0.45	272.62	649.99	1.49	1.00	-1.85	0.11	2.10	298.34
675.00	0.47	273.84	674.99	1.68	1.01	-2.05	0.11	2.28	296.20
700.00	0.50	274.93	699.99	1.88	1.02	-2.26	0.11	2.48	294.37
725.00	0.51	270.67	724.99	2.09	1.04	-2.48	0.16	2.69	292.64
750.00	0.52	266.60	749.99	2.30	1.03	-2.71	0.16	2.90	290.82
775.00	0.54	262.74	774.98	2.53	1.01	-2.94	0.16	3.11	288.94

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
800.00	0.56	259.12	799.98	2.77	0.97	-3.17	0.16	3.32	286.99
825.00	0.53	258.86	824.98	3.00	0.92	-3.41	0.13	3.53	285.19
850.00	0.49	258.57	849.98	3.23	0.88	-3.62	0.13	3.73	283.67
875.00	0.46	258.24	874.98	3.43	0.84	-3.83	0.13	3.92	282.36
900.00	0.43	257.85	899.98	3.63	0.80	-4.02	0.13	4.10	281.24
925.00	0.45	258.15	924.98	3.82	0.76	-4.21	0.08	4.28	280.23
950.00	0.47	258.42	949.98	4.02	0.72	-4.40	0.08	4.46	279.27
975.00	0.49	258.68	974.98	4.23	0.68	-4.61	0.08	4.66	278.36
1000.00	0.51	258.91	999.98	4.44	0.63	-4.82	0.08	4.86	277.50
1025.00	0.49	256.73	1024.98	4.66	0.59	-5.04	0.11	5.07	276.67
1050.00	0.47	254.38	1049.97	4.87	0.54	-5.24	0.11	5.27	275.84
1075.00	0.46	251.85	1074.97	5.07	0.48	-5.43	0.11	5.45	275.02
1100.00	0.44	249.12	1099.97	5.27	0.41	-5.62	0.11	5.63	274.20
1125.00	0.44	248.38	1124.97	5.46	0.34	-5.80	0.02	5.81	273.39
1150.00	0.44	247.63	1149.97	5.65	0.27	-5.97	0.02	5.98	272.60
1175.00	0.44	246.88	1174.97	5.84	0.20	-6.15	0.02	6.15	271.84
1200.00	0.44	246.13	1199.97	6.03	0.12	-6.33	0.02	6.33	271.10
1225.00	0.45	246.65	1224.97	6.22	0.04	-6.50	0.05	6.50	270.38
1250.00	0.46	247.14	1249.97	6.42	-0.04	-6.69	0.05	6.69	269.70
1275.00	0.48	247.60	1274.97	6.63	-0.11	-6.88	0.05	6.88	269.05
1300.00	0.49	248.04	1299.97	6.84	-0.19	-7.07	0.05	7.07	268.43
1325.00	0.48	246.50	1324.97	7.05	-0.28	-7.27	0.07	7.27	267.83
1350.00	0.47	244.90	1349.96	7.25	-0.36	-7.46	0.07	7.46	267.23
1375.00	0.46	243.22	1374.96	7.45	-0.45	-7.64	0.07	7.65	266.64
1400.00	0.45	241.48	1399.96	7.64	-0.54	-7.81	0.07	7.83	266.04
1425.00	0.46	239.04	1424.96	7.84	-0.64	-7.98	0.10	8.01	265.42
1450.00	0.48	236.74	1449.96	8.04	-0.75	-8.16	0.10	8.19	264.76
1475.00	0.49	234.58	1474.96	8.24	-0.87	-8.33	0.10	8.38	264.05
1500.00	0.51	232.56	1499.96	8.44	-1.00	-8.51	0.10	8.57	263.31
1525.00	0.52	232.55	1524.96	8.65	-1.13	-8.69	0.04	8.76	262.56
1550.00	0.53	232.54	1549.96	8.87	-1.27	-8.87	0.04	8.96	261.83
1575.00	0.54	232.53	1574.96	9.08	-1.42	-9.06	0.04	9.17	261.11

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
1600.00	0.55	232.52	1599.96	9.31	-1.56	-9.24	0.04	9.38	260.41
1625.00	0.56	232.68	1624.95	9.53	-1.71	-9.44	0.03	9.59	259.74
1650.00	0.57	232.83	1649.95	9.76	-1.86	-9.63	0.03	9.81	259.09
1675.00	0.57	232.97	1674.95	10.00	-2.01	-9.83	0.03	10.03	258.46
1700.00	0.58	233.12	1699.95	10.23	-2.16	-10.03	0.03	10.26	257.86
1725.00	0.57	231.75	1724.95	10.47	-2.31	-10.23	0.07	10.49	257.27
1750.00	0.55	230.32	1749.95	10.69	-2.46	-10.42	0.07	10.71	256.69
1775.00	0.54	228.83	1774.95	10.91	-2.62	-10.60	0.07	10.92	256.12
1800.00	0.53	227.27	1799.95	11.12	-2.78	-10.78	0.07	11.13	255.55
1825.00	0.55	228.14	1824.94	11.33	-2.93	-10.95	0.08	11.34	255.00
1850.00	0.57	228.96	1849.94	11.55	-3.10	-11.13	0.08	11.56	254.46
1875.00	0.58	229.72	1874.94	11.78	-3.26	-11.32	0.08	11.78	253.94
1900.00	0.60	230.44	1899.94	12.02	-3.43	-11.52	0.08	12.02	253.44
1925.00	0.58	229.07	1924.94	12.26	-3.59	-11.72	0.10	12.26	252.96
1950.00	0.56	227.60	1949.94	12.48	-3.76	-11.91	0.10	12.49	252.48
1975.00	0.55	226.04	1974.94	12.70	-3.92	-12.08	0.10	12.71	252.01
2000.00	0.53	224.36	1999.94	12.91	-4.09	-12.25	0.10	12.91	251.54
2025.00	0.52	226.56	2024.94	13.11	-4.25	-12.41	0.08	13.12	251.10
2050.00	0.52	228.81	2049.93	13.31	-4.40	-12.58	0.08	13.33	250.71
2075.00	0.51	231.08	2074.93	13.52	-4.55	-12.75	0.08	13.54	250.38
2100.00	0.51	233.38	2099.93	13.73	-4.68	-12.93	0.08	13.75	250.08
2125.00	0.53	231.42	2124.93	13.94	-4.82	-13.11	0.09	13.97	249.80
2150.00	0.54	229.56	2149.93	14.15	-4.97	-13.29	0.09	14.19	249.49
2175.00	0.56	227.81	2174.93	14.37	-5.13	-13.47	0.09	14.41	249.15
2200.00	0.57	226.16	2199.93	14.59	-5.30	-13.65	0.09	14.64	248.79
2225.00	0.55	223.04	2224.93	14.81	-5.47	-13.82	0.15	14.87	248.40
2250.00	0.53	219.66	2249.93	15.01	-5.65	-13.98	0.15	15.08	247.99
2275.00	0.51	216.00	2274.92	15.19	-5.83	-14.12	0.15	15.27	247.57
2300.00	0.49	212.07	2299.92	15.36	-6.01	-14.24	0.15	15.45	247.12
2325.00	0.48	207.68	2324.92	15.51	-6.19	-14.34	0.15	15.62	246.65
2350.00	0.48	203.14	2349.92	15.65	-6.38	-14.43	0.15	15.78	246.15
2375.00	0.47	198.50	2374.92	15.78	-6.57	-14.51	0.15	15.93	245.62

MD ft	INC deg	AZIM deg	TVD ft	VS ft	+N/-S ft	+E/-W ft	DLS °/100ft	CLOSURE DISTANCE ft	CLOSURE DIRECTION deg
2400.00	0.47	193.82	2399.92	15.89	-6.77	-14.56	0.15	16.06	245.07
2425.00	0.45	196.55	2424.92	15.99	-6.96	-14.62	0.12	16.19	244.52
2450.00	0.43	199.56	2449.92	16.10	-7.15	-14.68	0.12	16.32	244.04
2475.00	0.41	202.86	2474.92	16.21	-7.32	-14.74	0.12	16.46	243.60
2500.00	0.39	206.49	2499.92	16.33	-7.48	-14.82	0.12	16.59	243.23
2525.00	0.43	211.41	2524.92	16.46	-7.63	-14.90	0.22	16.74	242.88
2550.00	0.48	215.45	2549.92	16.61	-7.80	-15.01	0.22	16.92	242.55
2575.00	0.52	218.79	2574.91	16.78	-7.97	-15.14	0.22	17.11	242.24
2600.00	0.57	221.57	2599.91	16.98	-8.15	-15.30	0.22	17.33	241.94
2625.00	0.62	223.08	2624.91	17.20	-8.34	-15.47	0.19	17.58	241.66
2650.00	0.66	224.38	2649.91	17.45	-8.55	-15.67	0.19	17.84	241.39
2675.00	0.71	225.51	2674.91	17.71	-8.76	-15.88	0.19	18.13	241.12
2700.00	0.75	226.50	2699.91	17.99	-8.98	-16.11	0.19	18.44	240.86
2725.00	0.79	230.40	2724.90	18.30	-9.20	-16.36	0.26	18.77	240.64
2750.00	0.83	233.95	2749.90	18.63	-9.42	-16.64	0.26	19.12	240.48
2775.00	0.87	237.17	2774.90	18.98	-9.63	-16.94	0.26	19.49	240.39
2800.00	0.92	240.08	2799.90	19.36	-9.83	-17.28	0.26	19.88	240.36
2825.00	0.97	244.80	2824.89	19.76	-10.02	-17.64	0.38	20.29	240.40
2850.00	1.04	248.99	2849.89	20.20	-10.19	-18.05	0.38	20.73	240.54
2875.00	1.10	252.70	2874.88	20.66	-10.35	-18.49	0.38	21.19	240.77
2900.00	1.17	255.97	2899.88	21.16	-10.48	-18.96	0.38	21.67	241.07
2925.00	1.19	255.86	2924.87	21.67	-10.61	-19.47	0.09	22.17	241.42
2950.00	1.22	255.75	2949.87	22.20	-10.73	-19.98	0.09	22.68	241.75
2975.00	1.24	255.65	2974.86	22.74	-10.87	-20.50	0.09	23.20	242.07
3000.00	1.26	255.55	2999.86	23.28	-11.00	-21.02	0.09	23.73	242.38
3025.00	1.26	255.64	3024.85	23.83	-11.14	-21.56	0.01	24.27	242.67
3050.00	1.27	255.72	3049.84	24.39	-11.28	-22.09	0.01	24.81	242.96
3075.00	1.27	255.81	3074.84	24.94	-11.41	-22.63	0.01	25.34	243.24
3100.00	1.27	255.90	3099.83	25.49	-11.55	-23.17	0.01	25.88	243.50
3125.00	1.28	255.14	3124.83	26.05	-11.69	-23.70	0.08	26.43	243.75
3150.00	1.29	254.39	3149.82	26.60	-11.83	-24.24	0.08	26.98	243.98
3175.00	1.30	253.65	3174.81	27.17	-11.99	-24.78	0.08	27.53	244.19

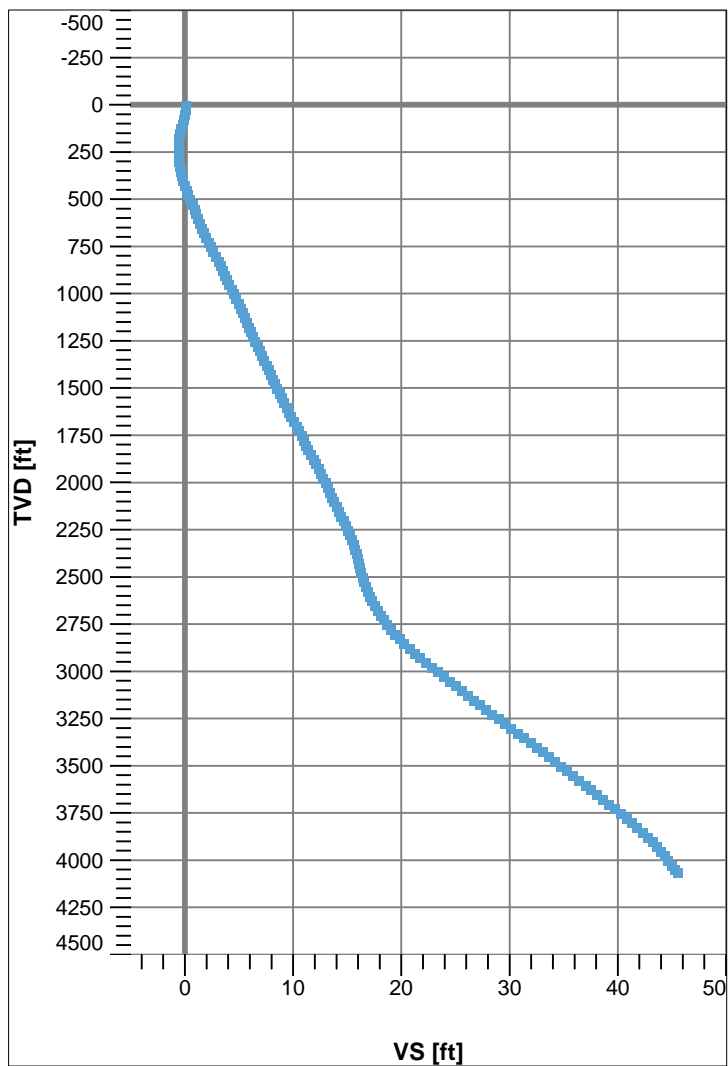
MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
3200.00	1.30	252.92	3199.81	27.73	-12.15	-25.33	0.08	28.09	244.37
3225.00	1.32	250.08	3224.80	28.31	-12.33	-25.87	0.27	28.66	244.51
3250.00	1.34	247.33	3249.79	28.89	-12.55	-26.41	0.27	29.24	244.59
3275.00	1.37	244.67	3274.79	29.47	-12.79	-26.95	0.27	29.83	244.62
3300.00	1.40	242.11	3299.78	30.07	-13.06	-27.49	0.27	30.43	244.60
3325.00	1.38	243.90	3324.77	30.66	-13.33	-28.03	0.19	31.04	244.57
3350.00	1.36	245.74	3349.77	31.25	-13.59	-28.57	0.19	31.64	244.57
3375.00	1.35	247.61	3374.76	31.84	-13.82	-29.11	0.19	32.23	244.61
3400.00	1.34	249.53	3399.75	32.42	-14.03	-29.66	0.19	32.81	244.68
3425.00	1.32	251.32	3424.74	33.00	-14.23	-30.20	0.18	33.39	244.78
3450.00	1.30	253.16	3449.74	33.57	-14.40	-30.75	0.18	33.95	244.90
3475.00	1.28	255.04	3474.73	34.13	-14.56	-31.29	0.18	34.51	245.05
3500.00	1.27	256.97	3499.73	34.69	-14.69	-31.83	0.18	35.06	245.23
3525.00	1.28	258.78	3524.72	35.24	-14.81	-32.37	0.16	35.60	245.42
3550.00	1.28	260.57	3549.71	35.80	-14.91	-32.92	0.16	36.14	245.64
3575.00	1.29	262.34	3574.71	36.36	-14.99	-33.48	0.16	36.68	245.88
3600.00	1.31	264.07	3599.70	36.92	-15.06	-34.04	0.16	37.22	246.14
3625.00	1.30	265.32	3624.69	37.47	-15.11	-34.61	0.12	37.76	246.41
3650.00	1.30	266.58	3649.69	38.03	-15.15	-35.17	0.12	38.30	246.70
3675.00	1.29	267.85	3674.68	38.58	-15.18	-35.74	0.12	38.83	246.99
3700.00	1.29	269.12	3699.67	39.12	-15.19	-36.30	0.12	39.35	247.29
3725.00	1.29	272.17	3724.67	39.66	-15.19	-36.86	0.28	39.87	247.61
3750.00	1.30	275.20	3749.66	40.19	-15.15	-37.43	0.28	40.38	247.96
3775.00	1.31	278.19	3774.66	40.71	-15.08	-37.99	0.28	40.88	248.35
3800.00	1.32	281.14	3799.65	41.23	-14.99	-38.56	0.28	41.37	248.76
3825.00	1.30	283.13	3824.64	41.73	-14.87	-39.12	0.20	41.85	249.19
3850.00	1.28	285.19	3849.64	42.21	-14.73	-39.66	0.20	42.31	249.63
3875.00	1.26	287.31	3874.63	42.68	-14.57	-40.20	0.20	42.76	250.07
3900.00	1.25	289.49	3899.62	43.13	-14.40	-40.72	0.20	43.19	250.52
3925.00	1.19	292.97	3924.62	43.55	-14.21	-41.21	0.37	43.59	250.98
3950.00	1.14	296.76	3949.61	43.93	-14.00	-41.67	0.37	43.96	251.44
3975.00	1.10	300.88	3974.61	44.28	-13.76	-42.10	0.37	44.29	251.90

MD	INC	AZIM	TVD	VS	+N/-S	+E/-W	DLS	CLOSURE DISTANCE	CLOSURE DIRECTION
ft	deg	deg	ft	ft	ft	ft	°/100ft	ft	deg
4000.00	1.06	305.33	3999.60	44.58	-13.50	-42.50	0.37	44.59	252.37
4025.00	1.10	299.73	4024.60	44.89	-13.25	-42.89	0.45	44.89	252.83
4050.00	1.15	294.56	4049.59	45.24	-13.03	-43.33	0.45	45.24	253.26
4065.00	1.18	291.67	4064.59	45.48	-12.91	-43.61	0.45	45.48	253.51



Name : Keeper Gyro Wireline Survey: Outrun
Generated : 2/11/2015 23:48:44 Mountain Standard Time

VS View



Plan View

